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## SOCIETIES AND ACADEMIES.

## AMERICAN MATHEMATICAL SOCIETY.

A REGULAR meeting of the American Mathematical Society was held at Columbia University on Saturday, February 28, 1903, extending through the usual morning and afternoon sessions. Thirty-one members were in attendance; fourteen papers were presented. The president of the society, Professor Thomas S. Fiske, occupied the chair, being relieved at the afternoon session by Vice-President Professor W. F. Osgood. The council announced the election of the following persons to membership in the society: Professor F. H. Bailey, Massachusetts Institute of Technology; Mr. A. T. Bell, High School, Reynolds, Ill.; Professor F. P. Brackett, Pomona College, Claremont, Cal.; Mr. W. E. Breckinridge, Morris High School, New York, N. Y.; Professor Ellen L. Burrell, Wellesley College; Miss E. B. Cowley, Vassar College; Professor E. E. De Cou, University of Oregon; Mr. F. D. Frazer, University of Oregon; Professor J. Willard Gibbs, Yale University; Dr. C. N. Haskins, Massachusetts Institute of Technology; Mr. A. C. Lunn, University of Chicago; Mr. C. L. E. Moore, Cornell University; Mr. F. G. Reynolds, College of the City of New York; Mr. C. E. Stromquist, Yale University; Professor W. E. Taylor, Syracuse University; Mr. Charles Van Orstrand, U. S. Geological Survey. Five applications for admission to the society were received.

Professor E. W. Brown was reelected a member of the editorial board of the *Transactions* for a term of three years. The office of assistant secretary of the society, vacated by the appointment of Dr. Edward Kasner to the editorial staff of the *Transactions*, was abolished.

It was decided to hold the summer meeting of the society at Massachusetts Institute of Technology during the week beginning August 31. A colloquium will this year be held in connection with the summer meeting. Courses of three to six lectures will be given as follows: By Professor E. B. Van Vleck, 'Selected topics in the theory of continued fractions and divergent series'; by Professor

F. S. Woods, 'The connectivity of non-euclidean space'; by Professor H. S. White, subject to be announced.

The following papers were read at the February meeting:

L. P. EISENHART: 'Congruences of conics.'

EMORY MCCLINTOCK: 'The logarithm as a direct function.'

H. P. MANNING: 'Non-euclidean geometry of nets of circles.'

C. E. STROMQUIST: 'A generalization of the length integral.'

EDWARD KASNER: 'Three notes on projective geometry.'

W. B. FORD: 'A theorem concerning the functions of two or more complex variables.'

W. F. OSGOOD: 'The integral as the limit of a sum, and a theorem of Duhamel.'

E. R. HEDRICK: 'The integral curves of a partial differential equation.'

E. B. VAN VLECK: 'On an extension of the 1894 memoir of Stieltjes.'

A. S. GALE: 'On a generalization of a set of associated minimum surfaces.'

G. A. MILLER: 'A fundamental theorem with respect to transitive substitution groups.'

E. W. BROWN: 'On the derivatives of the lunar coordinates with respect to the elements.'

CHARLOTTE A. SCOTT: 'On the fundamental theorem of projective geometry.'

ALFRED LOEWY: 'Ueber die Reducibilität der reellen Gruppen linearer homogener Substitutionen.'

After the meeting many of the members present dined and passed the evening together.

The next meeting of the society will be held in New York on April 25. The Chicago Section will meet at Northwestern University, Evanston, Ill., on April 11. The San Francisco Section will hold a meeting early in May.

F. N. COLE,  
Secretary.

## THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE.

SEVERAL New York biologists met at the home of Professor Graham Lusk, on January 19, 1903, to consider the advisability of organizing a society for experimental biology and medicine. This project was originally suggested by Dr. S. J. Meltzer. Those present at this meeting were unanimously in favor

of the plan suggested. The temporary chairman, Professor Frederic S. Lee, appointed Drs. Meltzer, Lusk and Gies a committee on constitution and by-laws.

On the 25th of February the meeting for permanent organization was held in the Laboratory of Physiological Chemistry of Columbia University. A constitution was adopted, officers were elected and a program of experimental demonstrations was successfully carried out.

The objects of 'The Society for Experimental Biology and Medicine' are, as indicated in the constitution, 'the cultivation of the experimental method of investigation in the sciences of animal biology and medicine.' "Any person who has accomplished a meritorious original investigation in biology or medicine by the experimental method shall be eligible to membership." "Every member shall be expected to conduct an experimental investigation, and give public notice of it, at least once in two years. Non-compliance with this requirement carries with it forfeiture of membership." "The program of each meeting shall consist in brief presentations of the essential points of experimental investigations in biology and medicine or allied natural sciences, preferably of *demonstrations* of actual experiments." The meetings will be held in suitable laboratories.

The officers elected to serve for the ensuing term are:

*President*—Dr. S. J. Meltzer.

*Vice-President*—Dr. Wm. H. Park.

*Secretary*—Dr. William J. Gies.

*Librarian*—Dr. Graham Lusk.

*Treasurer*—Dr. Gary N. Calkins.

The following demonstrations were made:

*An experiment to show the difference in effect between the simple cutting of the cervical sympathetic and the removal of the superior ganglion.*: S. J. MELTZER.

Dr. Meltzer presented a rabbit in which the cervical sympathetic had been cut on one side, and the superior ganglion had been removed on the other side. Both pupils were of the same size. About two hours before the demonstration one hind leg was tightly constricted and 1 c.c. adrenalin injected into it (peripheral to the ligature). On removal of the

ligature the pupil on the side from which the ganglion had been excised became greatly dilated, while the pupil on the other side remained unaffected.

*Differentiation of monkey blood from human blood by the precipitin serum test.*: JAMES EWING.

The serum used by Dr. Ewing in this demonstration was obtained from a chicken which had received five injections each of 10 c.c. of human placental blood. This serum proved to be much more selective than the ordinary humanized rabbit serum. The chicken serum in various dilutions up to 1-100 was added to specimens of human and monkey serum in dilutions also of 1-100. It produced turbidities in all the specimens of human blood, but failed entirely to affect the monkey blood. Finally, the chicken serum was added in a dilution 1-5 to specimens of both human and monkey blood. In the human blood a milky ring formed instantly at the line of junction of the test serum with the human serum, and a flocculent precipitate formed in fifteen minutes, while in the monkey serum no change whatever could be observed.

*An improved cage for metabolism experiments.*: WILLIAM J. GIES.

A cage specially designed for experiments on dogs was shown. The parts are so adjusted as to favor the collection and separation of feces, urine and hair. The improvements consist mainly of mechanical devices suggested by experimental experiences of the past few years in metabolism work, all of which are designed to insure quantitative accuracy as well as comparative convenience in the collection of excreta.

*Properties of 'Bence Jones's body'.*: WILLIAM J. GIES.

Through the kindness of Dr. Meltzer a patient's urine containing this substance had been placed at our disposal for chemical study. Some of the results of this investigation were presented and various properties of the body demonstrated. Special attention was drawn to a test of Boston's new method of detecting 'Bence Jones's body' in the urine.

WILLIAM J. GIES,  
*Secretary.*

## NEW YORK ACADEMY OF SCIENCES. SECTION OF ANTHROPOLOGY AND PSYCHOLOGY.

THE regular meeting of the section was held January 26, in conjunction with the American Ethnological Association, Professor Thorndike presiding. The first paper was presented by Dr. Maurice Fishberg, 'The Ancient Semites and the Modern Jews.' The somatic characteristics of the ancient and the modern Semites were discussed in detail, the purest representatives of the latter being the Arabian Bedouins. Their anthropological type is distinctly African. The bas-reliefs of the ancient Semites, as represented on the Assyrian and Egyptian monuments, are of the same type. The modern Jews are, on the other hand, a distinctly Asiatic type physically; they are brachycephalic—cephalic index 82 with less than five per cent. of heads having an index of 75 or less. Their head form shows very little variability, but one important feature is that in countries where the non-Jewish population is round-headed the Jews are also round-headed. In Caucasia their cephalic index is 87; in eastern Europe, where the cephalic index of the non-Jews ranges between 80 and 84, that of the Jews is about the same. In Africa, among the long-headed Gentile population, the Jews are also dolichocephalic. The same is observed to be the case with stature. The Jews are taller in countries where the general population is tall. The type of the Jew is dark, but 12 per cent. of pure-blood types, having fair hair and blue eyes, are to be found. The nose of the modern Jew, is not as frequently hooked as is generally supposed. Statistics show that only 12 per cent. are of this variety. The only characteristic which often betrays a Jew is the 'Ghetto eye.' But such Jews who have lived outside of the pale of the Ghetto for a few generations do not present this phenomenon. Physically there are two types of Jews—one derived from Asia, commonly called *Ashkenasim*, and constituting more than 90 per cent. of the modern Jewry. It has no relation at all with the second type, of African origin, commonly referred to as *Sephardim*. These, constituting less than 10 per cent. of the Jews, alone are more or

less related to the ancient Semites, although they have not everywhere preserved themselves as pure as in Africa. Besides these there are to be discerned other subtypes, in which Teutonic, Slavonic and Mongolian blood appears most prominent. From the standpoint of physical anthropology, the view that all the modern Jews are descendants of Abraham, Isaac and Jacob, can not be seriously considered. The only thing which binds the modern Jews together is their religion. In blood there is no more relation between the Jews than there is between the people who profess the protestant, methodist or unitarian religion.

Mr. H. H. St. Clair, 2d, then read a paper, 'Investigations among the Comanche and Ute Indians.' The investigations were made during the summer of 1902 upon the Comanches on the Kiowa-Comanche Reservation, Oklahoma, and the Utes of the Uintah Reservation, Utah. Both tribes belong to the great Shoshonean family. These tribes have a very loose social organization and no elaborate religious ceremonial. There are no calendar-records nor any traces of heraldry among the Comanches. The designs painted on rawhide bags or woven in beads have no meaning as with the Shoshones, but are merely ornamental, and there is lack of the symbolic conversationalism found among such people as the Arapahoes and Sioux. In their stories the coyote figures as the most frequent character representing the fool and schemer. There are striking similarities between the Shoshone and Nahuatl languages of Mexico, each using the same grammatical processes in its pronoun, noun, preposition and verb, and the order of words and structure of the sentence being practically the same in both.

JAMES E. LOUGH,  
Secretary.

## DISCUSSION AND CORRESPONDENCE.

## THERMODYNAMICS OF HEAT-ENGINES.

TO THE EDITOR OF SCIENCE: In undertaking to express to you, and through your columns to Dr. Thurston, my appreciation of his very generous review of my 'Thermodynamics of Heat-engines,' will you allow me to call at-